# DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

#### LAKE TROPHIC DATA

# MORPHOMETRIC:

Lake: EXETER RESERVOIR	Lake Area (ha): 7.12
Town: EXETER	Maximum depth (m): 4.6
County: Rockingham	Mean depth (m): 2.1
River Basin: Coastal	Volume $(m^3)$ : 147000
Latitude: 42°59'15" N	Relative depth: 1.4
Longitude: 70°56'07" W	Shore configuration: 2.22
Elevation (ft): 18	Areal water load (m/yr): 39.92
Shore length (m): 2100	Flushing rate $(yr^{-1})$ : 19.30
Watershed area (ha): 466.2	P retention coeff.: 0.39
<pre>% watershed ponded: 0.0</pre>	Lake type: artificial

BIOLOGICAL:	26 February 2001	30 August 2000
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 40%	ATTHEYA 80%
#2	MELOSIRA 20%	DINOBRYON 5%
#3	DINOBRYON 10%	FRAGILARIA 5%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (μg/L)		12.99
DOM. ZOOPLANKTON (% TOTAL) #1	ROTIFER SPP. 48%	NAUPLIUS LARVA 37%
#2	KERATELLA 30%	ARCELLA 12%
#3		POLYARTHRA 11%
ROTIFERS/LITER	54	214
MICROCRUSTACEA/LITER	3	433
ZOOPLANKTON ABUNDANCE (#/L)	69	823
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		1.7
BOTTOM DISSOLVED OXYGEN (mg/L)	10.6	3.0
BACTERIA (E. coli, #/100 ml) #1		< 10
#2		
#3		

# SUMMER THERMAL STRATIFICATION:

# not stratified

Depth of thermocline (m): None Hypolimnion volume (m³): None Anoxic volume (m³): None

CHEMICAL:			EXETER RI	ESERVOIR	
	26 February 2001		30 August 2000		
DEPTH (m)	1.0	3.0	1.0	`	3.0
pH (units)	7.0	6.8	7.3	,	7.2
A.N.C. (Alkalinity)	28.7	32.8	40.1		38.6
NITRATE NITROGEN	0.26	0.27	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.38	0.34	0.48		0.85
TOTAL PHOSPHORUS	<0.005	0.006	0.022		0.023
CONDUCTIVITY (µmhos/cm)	304.0	324.0	240.0		239.0
APPARENT COLOR (cpu)	34	37	55		65
MAGNESIUM			3.85		
CALCIUM			15.5		
SODIUM			21.6		
POTASSIUM			2.13		
CHLORIDE	72	65	45		45
SULFATE	13	13	8		7
TN : TP		102	22		37
CALCITE SATURATION INDEX					

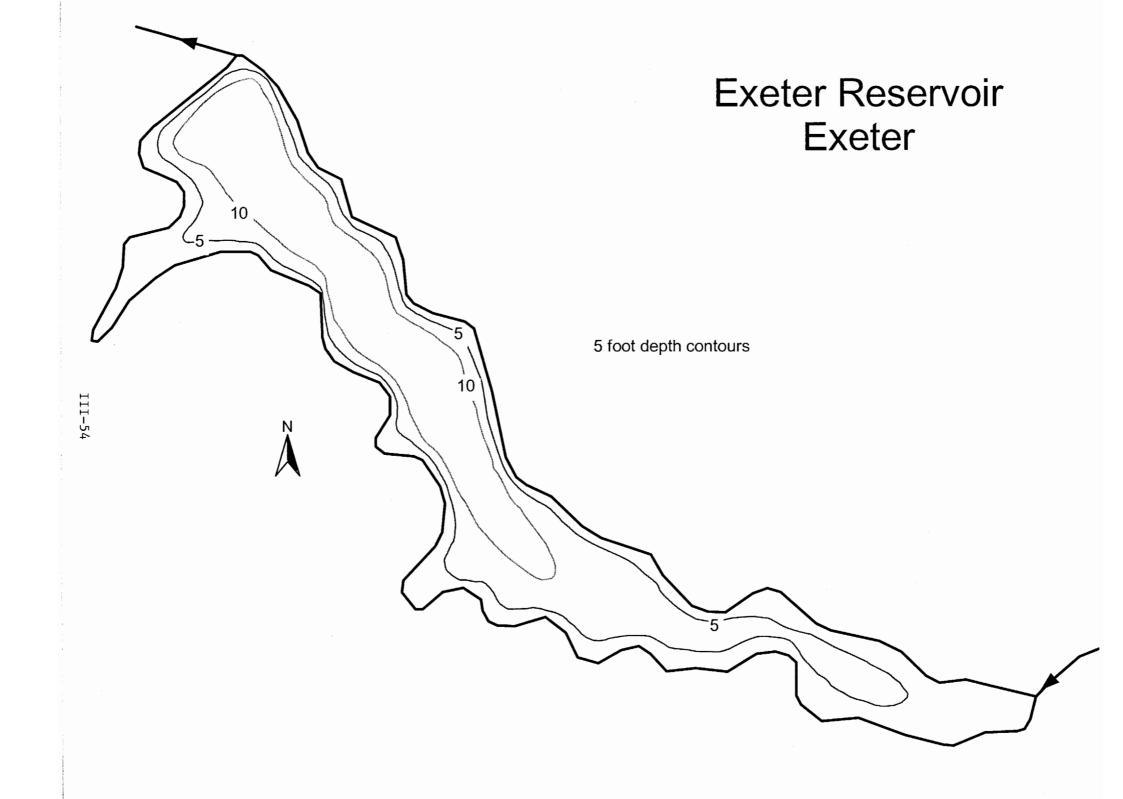
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 2000

•	D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
	**	4	3	3	10	Eutro.

#### **COMMENTS:**

- 1. This is the public water supply for the Town of Exeter.
- 2. This is a tea-colored, circum-neutral, eutrophic pond with ANC values atypically high for NH ponds. Elevated conductivity and cation values suggest either road salt runoff or salt spray from the ocean.
- 3. The dominant summer net phytoplankton (Attheya) is very rare in NH ponds.
- 4. The shoreline was largely undeveloped but was very near large retail and residential developments.



#### FIELD DATA SHEET

TOWN: EXETER

LAKE: EXETER RESERVOIR DATE: 08/30/2000 WEATHER: sunny, light breeze, warm

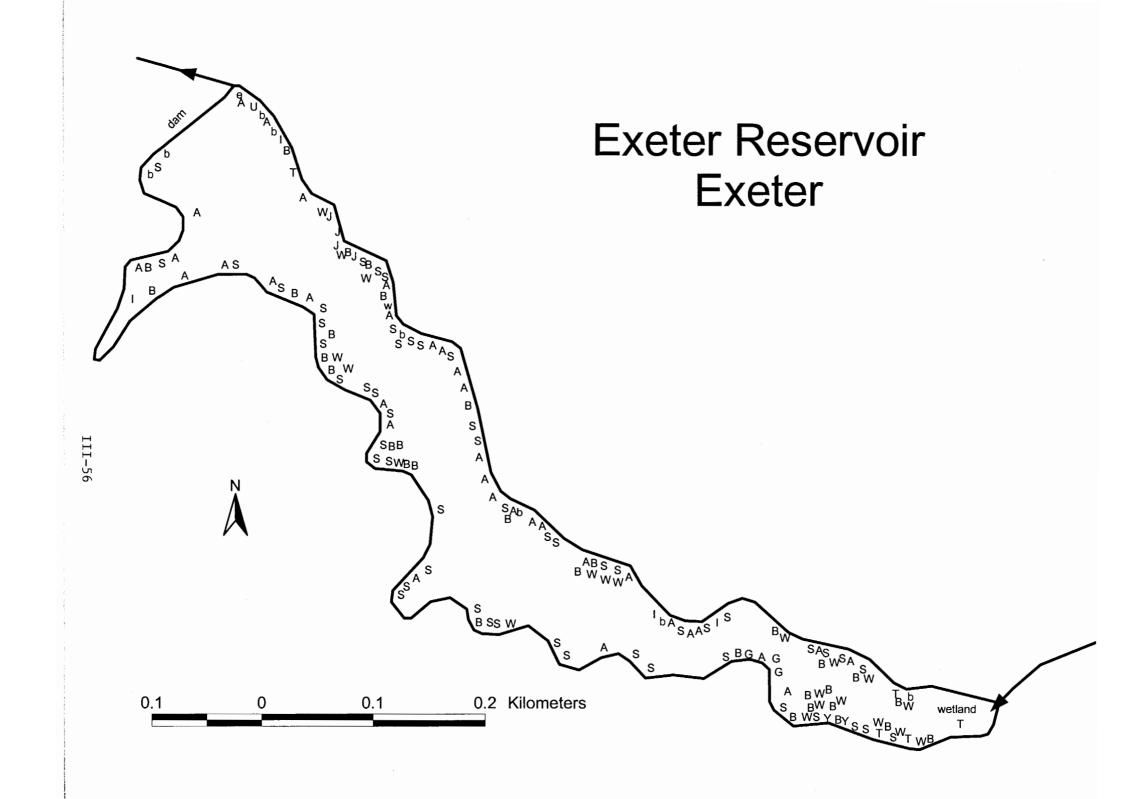
0.1 1.0 2.0 3.0 4.0	23.5 22.4 22.0 21.3 20.8	7.4 7.5 6.7 5.0 3.0	87 % 87 % 77 % 57 % 34 %
2.0 3.0	22.0	6.7 5.0 3.0	77 % 57 %
3.0	21.3	5.0 3.0	57 %
		3.0	
4.0	20.8		34 %
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SECCHI DISK (m): 1.7 COMMENTS:

BOTTOM DEPTH (m): 4.4

TIME: 1110

\*Dissolved oxygen values are in mg/L



# AQUATIC PLANT SURVEY

LAK	E: EXETER RESERVOIR	TOWN: EXETER	DATE: 08/30/2000		
Key	PLANT NAME				
Key	GENERIC	COMMON	ABUNDANCE		
е	Elodea nuttallii	Waterweed	Common		
บ	Utricularia	Bladderwort	Common		
A	Sagittaria	Arrowhead	Scat/Common		
b	Scirpus	Bulrush	Scattered		
L	Lythrum salicaria	Purple loosestrife	Scattered		
В	Brasenia schreberi	Water shield	Scat/Common		
I	Iris versicolor	Blue flag	Sparse		
T	Typha	Cattail	Scat/Common		
W	Potamogeton	Pondweed	Scattered		
J	Juncus	Rush	Sparse		
ន	Sparganium	Bur reed	Scattered		
G	Gramineae	Grass family	Sparse		
Y	Nuphar	Yellow water lily	Sparse		

# OVERALL ABUNDANCE: Common

# **GENERAL OBSERVATIONS:**

- 1. Bladderwort and waterweed covered most of the visible pond bottom.
- 2. Purple loosestrife was growing around much of the shoreline.
- 3. A cattail wetland was at the inlet end.